Tribal College Photovoltaic Instructors Program

Developed Under Contract to the

U.S. Department of Energy
Office of Economic Impact and Diversity

by

The Institute for Sustainable Power, Inc., and the
Native American Renewable Energy Education Program

Project Summary

Funded by the U.S. Department of Energy Office of Economic Impact and Diversity in the summer of 1999, the Tribal College Photovoltaic Instructors Program (TCPIP) was developed to create Renewable Energy Technology Centers of Excellence in Certified Practitioner Training. By working with the Tribal College Instructors to identify and adapt appropriate training programs to the needs of their local communities and to the industry at large, these participating schools will become models for quality practitioner training programs in the field of renewable energy technologies.

Participants

Eight Tribal College Instructors participated in the inaugural Instructor Training Workshop held at D-Q University, California, 26 July – 5 August 1999, three of whom were from the two lead colleges — Crownpoint Institute of Technology in Crownpoint, New Mexico, and Lac Courtes Oreilles Ojibwa Community College in Hayward, Wisconsin. These lead colleges will be responsible for the initial implementation of certification programs for off-grid photovoltaic (PV) design, installation, and maintenance practitioners. These certification programs will apply for accreditation through the Institute for Sustainable Power. The remaining colleges will have the opportunity to follow the lead colleges in setting up certification programs in the future, as funding and other support develops.

D-Q University President Morgan Otis, Jr., welcomes the instructors

Participants in the Instructor Training Workshop were:

- David Anthony, Bay Mills Community College
- Emmer Barela, Crownpoint Institute of Technology
- Ray Griego, Crownpoint Institute of Technology
- Susan Mahoney, D-Q University
- Steve Kozak, Lac Courtes Oreilles Ojibwa Community College
- Ann Krush, Sinte Gleska University
- Shane Ramsey, Sitting Bull College
- Bruce Benson, Sitting Bull College

Other participants in, and visitors to, the Instructor Training Workshop included

D-Q: University President Dr. Morgan Otis, Jr.

Instructors: Johnny Weiss, Solar Energy International, Carbondale, Colorado; Debby Tewa, Hopi Solar, Kykotsmovi, Arizona

Industry and Community: Darryl Conklin, Renewable Technologies, Inc.; Thomas Vonderhaar, BP Solarex, Inc.; Kari Smith, Center for Energy Efficiency and Renewable Technologies; and, Susan Hassett, Buzzards Roost Ranch, who provided a tour of the systems at her home.

Administrators: Mark Fitzgerald, ISP; Vivian Gratton, NAREEP; Eva Blake, NAREEP

Venue

The 1999 Instructor Training Workshop was held at D-Q University, 8 miles west of Davis, California.

The participants work with one of the course instructors on a PV water pumping exercise.

D-Q University is an accredited 2-year college, established in 1971, and it is the only Tribal College in the state of California.

D-Q University provided strong administrative support and good classroom facilities for the workshop. The college president, dean of instruction, public information officer, and environmental science instructor each did all they could do on short notice to support the workshop.

Instructor Training Workshop

The Instructor Training Workshop provided an opportunity to work with instructors from a number of different programs, with different needs and experiences, to provide them with a common base of information on PV technology, to provide them with hands-on experience with the technology, to assist them with training techniques, and to begin an effort to coordinate a Tribal College-based expert group to direct this effort.

Participants in the workshop came from quite different programs and had a wide range of experience with electrical trades and renewable

energy - from general familiarity to actual experience installing residential solar systems and teaching renewable energy classes.

The Workshop content ranged from classroom lectures to hands-on activities, and presentations by the participants of course modules that they developed and taught to the class, to practice and critique instructional skills. In addition to these traditional workshop activities, though, the 2-week program included off-site visits with industry representatives, tours of commercial and residential systems, and an open house, where the local industry displayed products and systems for the participants and the general public.

Lessons Learned

Following are some lessons learned in coordinating this workshop.

1) The timing of funding support is crucial. Training for the program must happen in the summer, because tribal college instructors have no time during the school year to attend more than a one or two-day training. However, if not done in early summer, it will run up against school start dates and orientation, and important, including the Honor the Earth Pow-Wow at Lac Courtes Oreilles and Sun Dance at Rosebud.

2. The workshop needed more of a hands-on, application focus. Although participants were instructors and needed to be prepared to teach, they were almost universally hands-on people who needed the experience and satisfaction of actually installing a working system

3. The diversity in background, experience, and future plans of the participating instructors might be better met through a different kind of training plan, possibly focused trainings co-led by the local instructor and a trainer, with support from local installers

4. The support of college administrators and community members is a great boon to colleges. We should find more ways to engage them.

5. Support a champion at each participating school.

6. The tribe-to-tribe, instructor-to-instructor connections are invaluable. There is a real need for the development of a strong working group of tribal representatives involved in sustainable energy.

Project Sustainability

The goal of this work is to coordinate the development of a Tribal College-centered and driven core of quality instructors and practitioners. To succeed, the participants must be given the technical and educational resources to coordinate their own programs, while providing the framework within which they can work together to support each other in their respective efforts. With a growing demand for qualified renewable energy technicians, these schools have the opportunity to lead the industry, globally, in providing quality training to international standards.